

***Harpacticella itoi*, a New Harpacticoid Species from Korea**
(Copepoda: Harpacticoida: Harpacticidae)

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하르팍티쿠스류 1신종, *Harpacticella itoi*
(橈脚亞綱: 하르팍티쿠스目: 하르팍티쿠스科)

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摘 要

耽津江과 蟾津江의 感潮水域에서 채집된 하르팍티쿠스류 1신종을 *Harpacticella itoi*로 명명하여 기재한다. 본 종은 암컷과 수컷의 제5胸肢 外肢에 난 강모의 수가 각각 7개와 4개로 *Harpacticella*속의 여타 종과 차이가 있다.

Key words: taxonomy, Copepoda, Harpacticidae, *Harpacticella itoi*, n. sp., Korea.

The genus *Harpacticella* Sars, 1908 shows very poor fauna, and only 5 species have been described in the genus until now: *H. inopinata* Sars, 1908; *H. paradoxa* (Brehm, 1924); *H. lacustris* Sewell, 1924; *H. amurensis* Borutzkii, 1952; *H. oceanica* Ito, 1977. Harpacticoid copepods of *Harpacticella* have been collected chiefly from plankton samples, weed-washings and sandy bottoms of the littoral region, mostly of Asian inland (Ito and Kikuchi, 1977). Of the five known species, *H. oceanica* is true marine species and *H. lacustris* brackish water, and the other three genuine freshwater. The present new species, obtained from the tidal reaches of the Tamjin River and the Sömjün River draining into the Korean Straits, is the

second species of *Harpacticella* found in brackish waters, and the first record of the genus from Korea. The specimens were dissected, mounted and measured in polyvinyl lactophenol. Type specimens are deposited in the Department of Biology, Taegu University.

***Harpacticella itoi*, new species**

(Figs. 1-3)

Material: 5♂♂, 23 (8 ovi.)♀♀, Sökgyo Bridge at Sökgyo-ri, Kangjin-üp (about 5.5 km upstream from

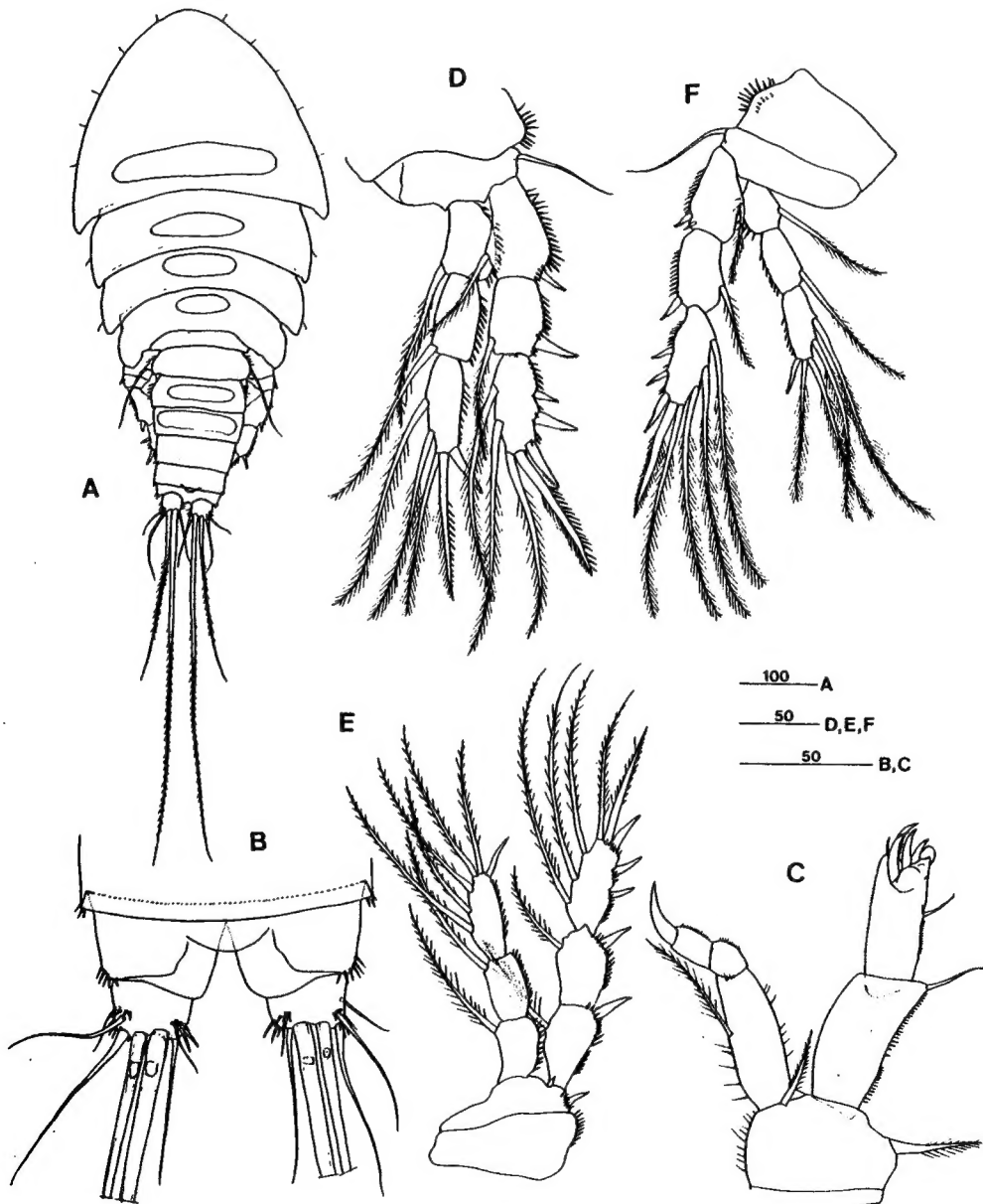


Fig. 1. *Harpacticella itoi* n. sp., female: A, habitus, dorsal; B, anal segment and caudal rami, dorsal; C, leg 1; D, leg 2; E, leg 3; F, leg 4. (unit of scales in μm)

the mouth of the T'amjin River, 34° 37' 55"N, 126° 48' 47"E), Feb. 7, 1987, coll. by Cheon Young Chang: 3♂♂, 32 (4 ovi.)♀♀, same locality as above (temperature: 6.2°C; salinity: 0.1‰), Jan. 30, 1991, coll. by C. Y. Chang; 6♂♂, 30 (2 ovi.)♀♀, Samsingyo Bridge at Sŏkgyo-ri, Kangjin-ŭp (about 2.2 km upstream of the T'amjin R.; 34° 37' 50"N, 126° 46' 59"E; littoral of pebble-bottomed stream; temperature: 5.5°C, salinity: 4.1‰); 1♂, 9 (1 ovi.)♀♀, Hadong Bridge at Hadong-ŭp (about 8 km upstream from mouth of the Sŏmjŏn River; 35° 03' 42", 127° 44' 30"E; sandy bottom), July 3, 1984, coll. by Ki Sik Min.

Type specimen: holotype-1♀, Sŏkgyo, T'amjin R., Jan. 30, 1991, dissected and mounted in polyvinyl lactophenol (slide no. HH201); allotype-1♂, collection details same as holotype (slide no. HH202); paratypes-other materials except holotype and allotype, with same collection details.

Female: Body (Fig. 1A) fairly depressed dorsoventrally about 0.65mm long, excluding rostrum and furcal setae. Cephalothorax somewhat triangular and wider than long, with some scattering hairs on dorsal

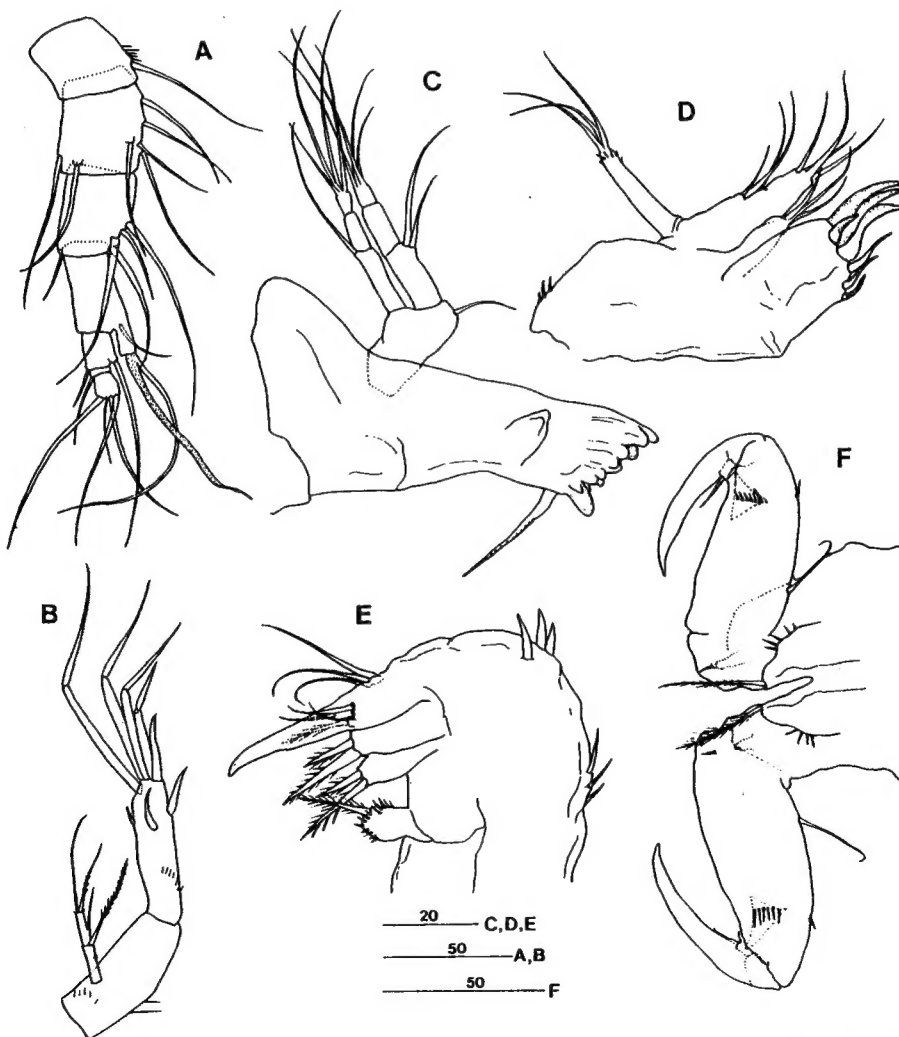


Fig. 2. *Harpacticella itoi* n. sp., female: A, antennule; B, antenna; C, mandible; D, maxillule; E, maxilla; F, maxilliped. (unit of scales in μm)

surface and along lateral margin; cephalothorax a little longer than next three thoracic somites combined. Prosoma gradually tapering behind. Rostrum not conspicuous in dorsal view, but somewhat developed, extending downward beyond first antennular segment in lateral view. Urosome markedly narrower than prosomal somites. All abdominal segments with row of spinules on posteroventral margin. Anal operculum convex with smooth margin, reaching the proximal third of anal segment.

Caudal rami (Fig. 1B) a little divergent, somewhat broader than long, slightly tapering distally. Lateral surface of ramus with 2 setae posterior to midlength with a few spinules around these setae. Outer terminal seta slender, 3 times longer than the ramus and a little longer than inner seta. Median apical seta about 3/4 length of body.

Antennule (Fig. 2A) of 7 articles, short and blunt; article 4 much longer than sum of next three, expanding distolaterally with a long aesthetasc; article 6 very small, and dimly articulated. Exopod of antennae (Fig. 2B) two-segmented, with total 4 setae.

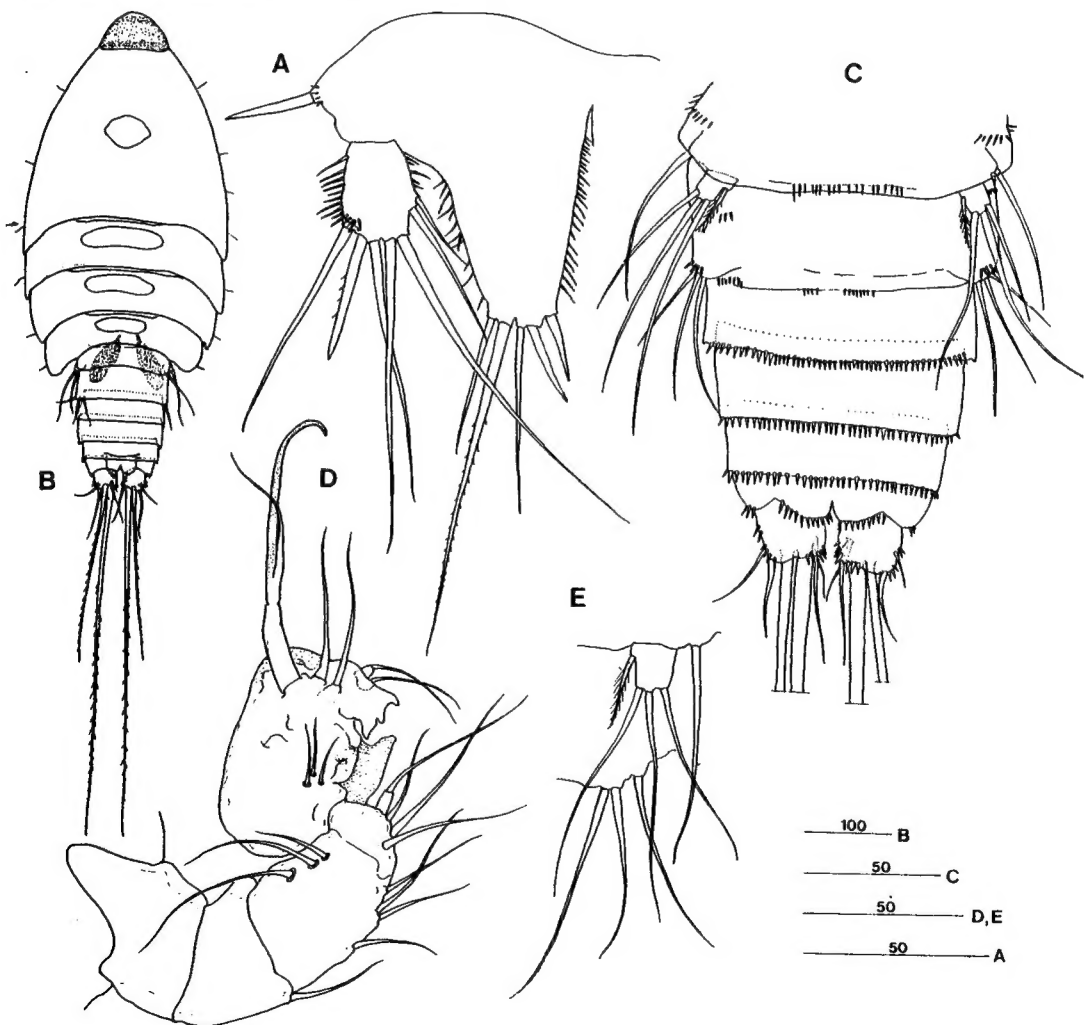


Fig. 3. *Harpacticella itoi* n. sp. A, female: leg 5. B-E, male: B, habitus, dorsal; C, urosome, ventral; D, antennule; E, leg 5 and leg 6. (unit of scales in µm)

Mandible (Fig. 2C) with sclerotized blunt process, bidentate pars incisiva and a long seta on praecoxa; endopod and exopod subequal; endopod with 2 setae on distolateral corner of article 1, and 5 apical setae on last article. Maxillule (Fig. 2D) with 4 warped claw-like spines and 3 blunt setae on cutting edge of praecoxa; endopod bearing 3 setae; exopod elongated, cylindrical with 3 setae. Maxilla (Fig. 2E) with a swollen protuberance bearing one plumose seta on inner margin of coxa; basis forming a strong claw, Maxilliped (Fig. 2F) with long and tapered endopod (near 3 times as long as wide), bearing a long seta on proximal third of dorsal edge. Joints of maxillipeds not widened.

Thoracic leg 1-4 (Fig. 1C-F) each with exopod and endopod of 3 segments. Leg 1 prehensile with claw-like spines. Exopod stout, longer than endopod; first segment 1.1 times longer than next segment and nearly same in length as first segment of endopod; segment 2 with a seta inserted on a little posterior to midlength of outer margin. Endopod with a long seta near middle of inner margin of segment 1. The ornamentation of leg 2-4 as follows:

Leg 2	basis	0-1	exp	1-1;	1-1;	2,2,3
			enp	1-0;	1-0;	2,2,1
Leg 3	basis	0-1	exp	1-1;	1-1;	3,2,3
			enp	1-0;	1-0;	3,2,1
Leg 4	basis	0-1	exp	1-1;	1-1;	3,2,3
			enp	1-0;	1-0;	2,2,1

Leg 5 (Fig. 3A) with inner expansion of basipod, connected with each other by a very small intercoxal plate, bearing 5 terminal setae of different lengths, of which the fourth from inner margin is the longest (about 3-4 times as long as the exopod), and the third fine one the next. Exopod somewhat rectangular, 1.4 times longer than wide, reaching about middle of basipodal expansion; bearing total 7 setae comprising of 4 apical, 1 outer subapical and 2 inner setae, with groups of fine spinules on both sides of exopod.

Male: Body (Fig. 3B) length about 0.53mm. Much slender, and rostrum more conspicuous than in female. Antennule (Fig. 3D) of 7 articles; fifth one swollen with a wing-like process on its anterior margin, and a cylindrical protuberance bearing one narrow aesthetasc and a seta; last one forming claws. Ornamentation of leg 1-leg 4 and caudal rami same as in female. Basipod of leg 5 (Fig. 3E) reducing to a very small segment, with an outer seta; exopod as long as wide on its base, with 4 setae in all, including a rather short seta on inner proximal margin of exopod. Leg 6 with 3 long setae in all on lateral corner. Other characters nearly same as in female.

Etymology: Specific name in honor of the late Dr. Tatsunori Itô in recognition of his valuable contribution to the knowledge of harpacticoid copepods, including the genus *Harpacticella*.

Remarks: Comparison of the present new species with other congeners is shown in Table 1. According to the Table 1, *H. itoi* is the most similar to *H. lacustris* of all congeners, but easily discernible from it by the armature of leg 5 in both female and male. "*Harpacticella lacustris*: Shen, 1979", the specimens of which had been collected from a salt farm in Fuchien Province, China, closely resembles the present new species, but it cannot be confirmed by the insufficient description and unknown male. Therefore, further investigations of estuaries in eastern China are urgently required for understanding the origin and geographical distribution of *Harpacticella*.

Table 1. Character comparisons of the present new species with other congeners of *Harpacticella*

Characters \ species	<i>H. inopinata</i>	<i>H. paradoxa</i>	<i>H. lacustris</i>	<i>H. amurensis</i>	<i>H. oceanica</i>	<i>H. itoi</i> , n. sp.
length to width ratio of caudal ramus	~1	>1	<1	1.5	<1	<1
segm. 1 of exp./ segm. 2 of enp. in leg 1	≥1	>1	~1	>1	~1	~1
segm. 1/segm. 2 of exopod in leg 1	~1	~1	≥1 (nearly 1.5)	~1	>1	>1 (1.1)
exopod of leg 5 in female (length to width ratio)	oval (~2)	elongated (>2)	quadrangular (~1.5)	oval (~1.5)	elongated (~2.5)	quadrangular (1.4)
armature of exopod of leg 5 in female	5 setae	5 setae	5 setae	4 setae	5 setae	7 setae
armature of exopod of leg 5 in male	3 setae	3 setae	3 setae	unknown	4 setae (inner seta distal)	4 setae (inner seta proximal)
habitat	freshwater	freshwater	brackish	freshwater	marine	brackish
localities	Baikal Lake (Sars, 1908)	Talifu Lake in Yunnan Pro- vince, China (Brehm, 1924); Yukawa River, Nikko in Japan (Ito and Kikuchi, 1977); spring stream in Tokyo (Ishida, 1989a)	Chilka Lake near Calcutta in India (Sewell, 1924); Aldabra Atoll in Indian Ocean [Wells and McKenzie, 1973 (cited from Ito and Kikuchi, 1977)]; River Yoichi in Hokkaido, Japan (Ishida, 1989b)	Amur (Borutzkii, 1952)	Bonin Islands in Japan (Ito, 1977)	Tamjin River and Sömjün River in Korea

ABSTRACT

A new species belonging to genus *Harpacticella* of Harpacticidae, collected from the Tamjin River and the Sömjin River draining into the Korean Straits, is described and illustrated under the name of *Harpacticella itoi*. The present species is different from the other 5 congeners by the armatures of exopodites of female and male leg 5.

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